New Entomology Advisor Joins UCANR

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In June, Dr. Hamutahl Cohen joined University of California Agriculture and Natural Resources as an entomology advisor for Ventura and Los Angeles Counties. I recently had the chance to speak with Dr. Cohen to learn about her background and what she has been observing in avocado groves in the few months since joining UCANR.

Dr. Cohen is originally from Los Angeles. She attended UC Berkeley for her undergraduate degree where she majored in Environmental Science, Policy, and Management with a specialization in entomology. While at Berkeley she had the opportunity to study under insect chemical ecologists, agroecologists and pollinator ecologists working in agriculture.

One experience that stands out to her was working as a research assistant for Dr. Houston Wilson on a project studying vineyard management and the western grape leafhopper. From that experience she fell in love with the research process and saw the impact that agricultural research can have on the local community.

Upon graduation from Berkeley, Dr. Cohen knew she wanted to work with insects but with no farming background she knew she needed to learn more about agriculture. Thus, she took a position as a farming apprentice at the Center for Agroecology and Sustainable Food Systems (CASFS) at UC Santa Cruz. There she gained experience with crop planning, soil management, crop rotations, cover cropping, composting and greenhouse production with a variety of annual and perennial crops.

Dr. Hamutahl Cohen, UCANR Entomology Advisor.

Following her apprenticeship with CASFS, Dr. Cohen began her Ph.D. program at UC Santa Cruz, where she studied the role of cultural practices in urban agriculture on the three Ps – pollinators, predators and parasitoids. Her research took a broad landscape ecology approach to understanding insect population dynamics and how processes such as urbanization and agricultural intensification impact beneficial insects. Following

her Ph.D., Dr. Cohen worked as a postdoctoral researcher in the Entomology Department at UC Riverside on pollinator conservation in almonds, peppers and sunflowers.

She then accepted a position with the University of Florida Cooperative Extension as a commercial horticulture agent working on pest control in the ornamental horticulture industry. Florida is home to a lot of insects and is constantly under threat from invasive exotic pests. Her work there focused on pests on palm trees, ornamental hedge plants and turf grass, primarily focusing on pest identification, monitoring, pesticide application safety and developing and promoting integrated pest management strategies.

Dr. Cohen said taking the position with UCANR was like coming home. She was drawn to the position because of "the community of advisors and researchers here, who are known for sparking innovation, conducting rigorous research and enhancing California agriculture in their local communities." Dr. Cohen went on, stating "I grew up in California and have always been amazed by the diversity of agricultural crops and products our state puts out. I'm also keenly aware about how vulnerable our environments are. From the coast to the mountains, our farms are embedded in unique landscapes and ecosystems, so how we farm in California matters for issues like pollution, biodiversity and climate change. When it comes to pest control, I am excited to work with UCANR because of its focus on addressing pest problems with minimal impacts to the environment through the development of integrated pest management programs."

As an entomology advisor, Dr. Cohen's responsibilities include developing an education and research program focusing on insect pest management in agricultural and natural ecosystems in Ventura and Los Angeles counties. She noted the challenge of a position like hers, and what makes it exciting, is the opportunity to work with different Southern California crops – berries, citrus, avocados – and the myriad pest issues that comes with them, such as pest population monitoring, pest biology, pesticide resistance monitoring, application technology and evaluating biological and cultural control IPM methods. Partnering with the diversity of stakeholders – PCAs, small and large growers, land stewards, regulatory bodies, the general public – associated with each crop will be a key to her success. She added, "I really want to work on increasing

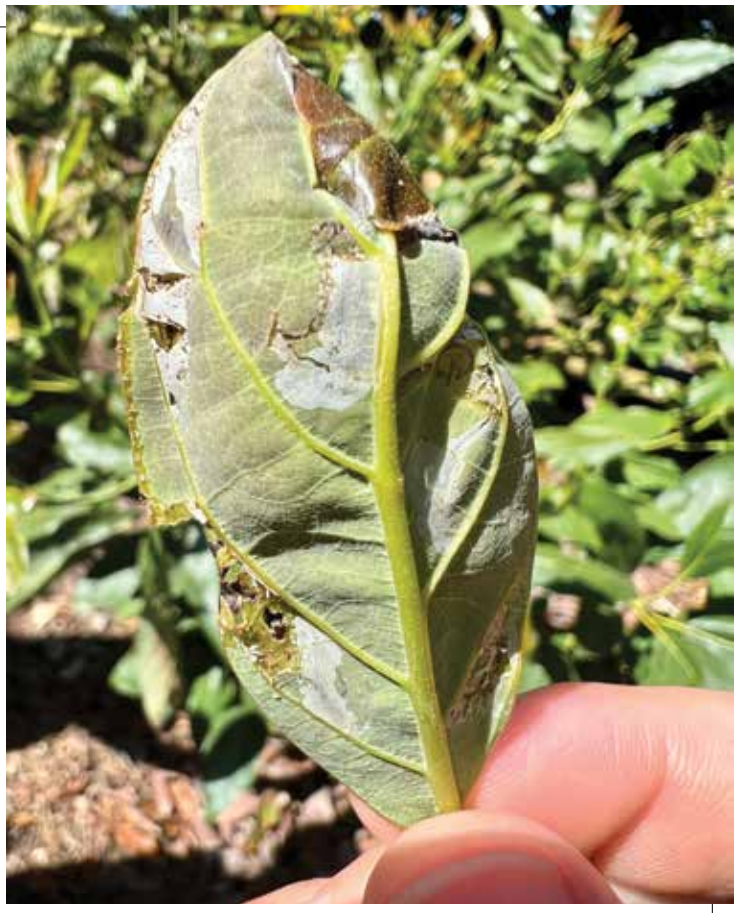
communication and relationships between these groups, particularly between growers and the public, to increase knowledge and education about what our agricultural communities are doing to sustainably advance pest control."

I finished our conversation by asking Dr. Cohen about the *Coloptilia* moth that was first reported on avocados in California in July 2020. The larvae of this moth species undergo hyper-metamorphosis. The early larval stages are leaf miners before emerging to become a leaf roller. Since 2020, there have been varying reports about this insect pest with a few PCAs reporting the need to spray. However, in 2023 reports of this pest and its damage seem to have skyrocketed with it being quite widespread in Ventura and Santa Barbara counties.

Dr. Cohen told me that we still don't know much about this new pest, including whether it is an exotic pest or a local insect that has adapted to avocados. It's part of a family of moths called Gracilliaridae, which has 105 genera and 2,000 species.

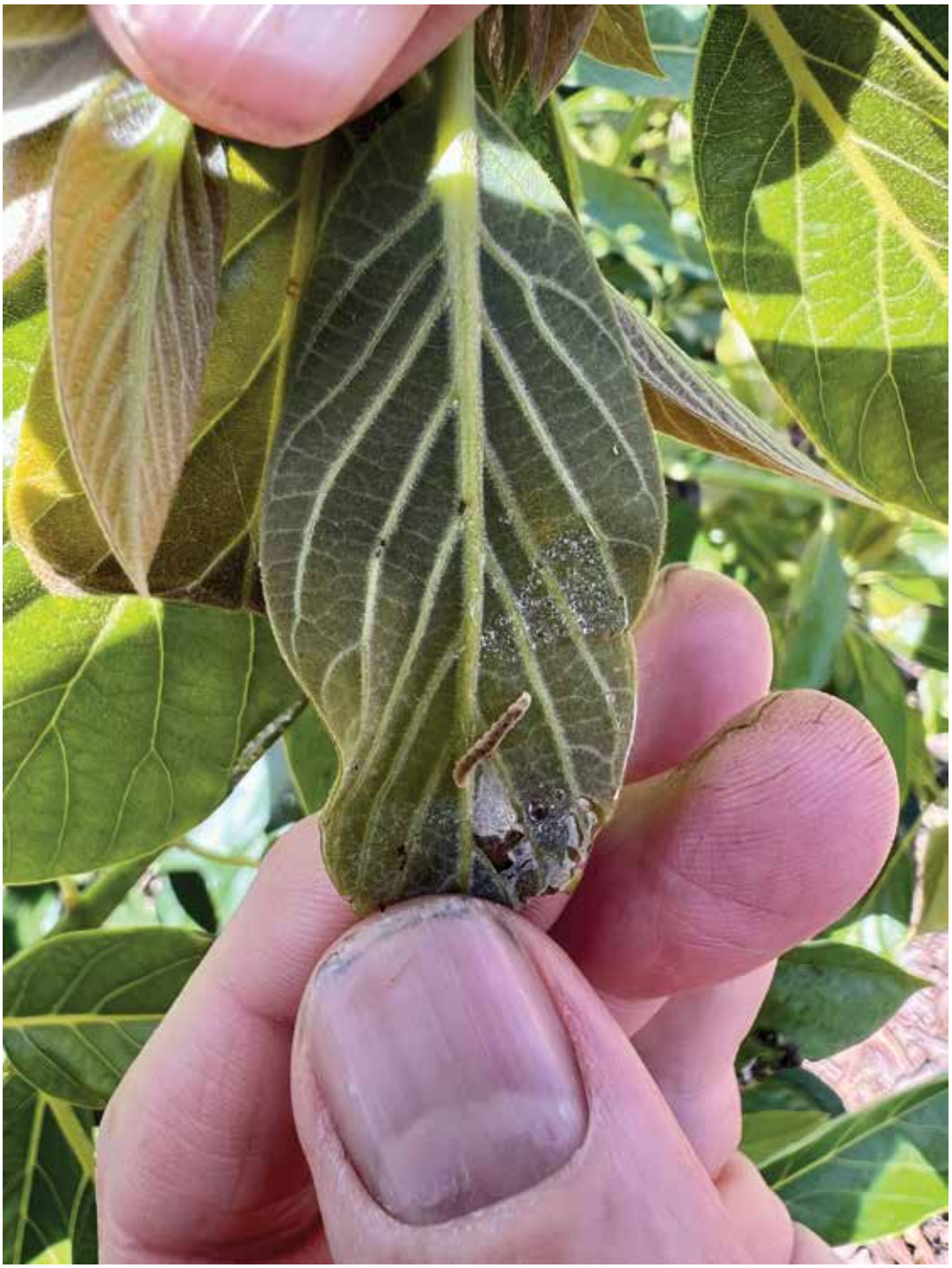
It's likely the impact of this pest will be variable and its presence may vary from season to season. It is most attracted to young leaf flush and its threat is probably greatest to young trees where it could negatively impact photosynthesis. Currently, it is only known to damage leaves and not fruit.

Dr. Cohen told me that she has been working to learn more about how widespread this pest is in Ventura and surrounding counties. She has seen some growers with the pest present on a significant portion of their young flush, and other growers who are not affected at all. The unusual weather this year has affected pest populations, and it's too early to know if this will become a major avocado pest so it's something she is keeping an eye on. "I've been keeping track of where I've seen the pest, curating a reference collection of larvae and adults to help with identification, and working with CDFA to catalog the insect in their records," she said.



An avocado leaf showing damage from the miner stage of the Coloptilia moth as well as the leaf roller phase of development.

She recommended CAC consider some research funding to better understand this pest's biology and to develop effective control strategies. "We like to promote Bt [*Bacillus thuringiensis*, a soil-dwelling bacterium toxic to certain insect larvae] and Spinosad for caterpillars, but this insect hides underneath the waxy leaves of avocados, so these controls aren't super effective as they don't come into contact with the insect



An avocado leaf with leaf roller larva stage of the Coloptilia moth.

or the tissue it's eating. We need to figure out more about its life history, when it is present, for how long and how many generations, and that can tell us more about the most effective time to apply any type of treatment."

She also noted research would be useful to understand the wasp parasite — which we know virtually nothing about — that has been associated with this pest. Assassin bugs, lacewings and minute prate bugs also are natural enemies, but we don't know if these will be effective at keeping populations of the *Coloptilia* moth in check. Lastly, it would be good to understand how cultural practices, such as pruning and weed management, may affect this pest's and its natural enemies' populations.

** Images in this article courtesy of Dr. Hamutahl Cohen*